

REMARKS

Claims 1 - 3, 5 - 12 and 14 - 15 remain active in this application. Claim 13 has previously been canceled. Claims 1, 9, 11, 12 and 14 have been amended to answer criticisms by the Examiner. Support for the amendments of the claims is found throughout the application, particularly at page 1, lines 10 - 22, of the specification as originally filed. No new matter has been introduced into the application.

Claims 1 - 3, 5 - 8, 11 - 12 and 14 - 15 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement of the Statute. This ground of rejection is respectfully traversed.

The Examiner first asserts in regard to claims 1 - 3, 5 - 8 and 15 that there is no support in the specification for "bi-directional communication or reception of any kind". It is respectfully submitted that this assertion is clearly incorrect and is tenable only to the extent that the word "bi-directional" does not appear in the original specification. The Statute which the Examiner asserts as a basis for this ground of rejection requires a written description of the invention "in such full, clear, concise and exact terms as to enable any person *skilled in the art* to which it pertains, or with which it is most nearly connected, to *make and use the same...*". There is no requirement for *verbatim* support but only substantive support sufficient to enable a person *skilled in the art* to practice the invention.

In this regard, the Examiner's attention is respectfully called to page 1, lines 10 - 22 of the original specification. In lines 15 and 16, it is noted

that portable terminals are known for use to "obtain newest data" which clearly corresponds to "reception", particularly in view of line 19 in which it is indicated that a user of the portable radio terminal may "show the obtained data to the customer". Lines 20 - 22 of the passage note use of the portable radio terminal for "inputting of order acceptance data and so forth" which clearly corresponds to transmission from the portable radio terminal. Titles of Laid-open patent applications cited in the paragraph bridging pages 1 and 2 also refer to reception at and transmission from a portable terminal and communications between a portable terminal and a base station which, it is respectfully submitted, are well described as "bi-directional". The following paragraph at page 2, lines 7 - 17, clearly indicates that it is known for these basic (e.g. transmission and reception) functions to be performed using a single (e.g. built-in) antenna. Further, it is respectfully submitted that throughout the remainder of the specification, the context of the term "transmission" clearly establishes that the term is intended to connote both transmission and reception functions.

Therefore it is clearly seen that the original specification establishes that it is known for portable radio terminals, to which the invention pertains, to perform both transmission and to accommodate both functions using a single antenna and that one *skilled in the art* would possess knowledge of how such bi-directional communication could be achieved. Moreover, it is respectfully submitted that the invention does not involve the particulars of obtaining such a function but only switching between antennas capable of similar functions when one of the antennas is touching or at least partially covered by a body part of a user and the

detection of that condition. it is respectfully submitted to be abundantly clear that the Examiner's assertion regarding "reception" is clearly erroneous and, even if correct, would not support the asserted ground of rejection since the original specification is sufficient for enablement of the practice of the invention by those *skilled in the art*; the level of which skill to comprehend bi-directional communication using a single antenna is also well-established by the specification as well as being established beyond question by many familiar and commercially available wireless communication devices known at the time the invention was made and the present application filed. Therefore, the asserted ground of rejection is clearly in error and, upon reconsideration, should be withdrawn.

Nevertheless, while it was noted above that there is no requirement in the Statute for *verbatim* support for claim recitations, claim 1 has been amended to use the terminology of the original specification at page 1, lines 10 - 22, as noted above. Therefore, this ground of rejection is clearly untenable in regard to claim 1 and claims depending therefrom and should be withdrawn in regard to claims 1 - 3, 5 - 8 and 15.

In regard to claims 11 - 12 and 14, the Examiner asserts an inconsistency with the recitation of an optical sensor in claim 9. In response, it is noted that use of a plurality of sensors and different types of sensors are clearly disclosed and well-illustrated. It is also respectfully pointed out that an optical sensor also effectively senses touch or covering of the sensor which blocks or reflects light as detected by the optical sensor. Therefore, no contradiction of claim 9 is presented by claims 11 or 12, as currently rejected. Nevertheless, in order to expeditiously resolve the

issue, claims 11, 12 and 14 have been amended to remove any possible contradiction of claim 9 and to be more accurate and in accord with the intended scope of these claims. Therefore, it is respectfully submitted that this ground of rejection is clearly untenable in regard to claims 11, 12 and 14 as now amended. Therefore, reconsideration and withdrawal of this ground of rejection of claims 1 - 3, 5 - 8, 11 - 12 and 14 - 15 is respectfully requested.

Claims 1, 3, 5, 7 and 8 (and, apparently, claim 2) have been rejected under 35 U.S.C. §103 as being unpatentable over Mizoguchi in view of Vannatta et al.; claims 9, 11, 12 and 15 have been rejected under 35 U.S.C. §103 as being unpatentable over Werling in view of Bowen et al.; claim 6 has been rejected under 35 U.S.C. §103 as being unpatentable over Mizoguchi in view of Vannatta et al. and Bowen et al.; claim 7 has been rejected under 35 U.S.C. §103 as being unpatentable over Mizoguchi in view of Vannatta et al. and Werling et al.; claim 10 has been rejected under 35 U.S.C. §103 as being unpatentable over Mizoguchi in view of Bowen and Vannatta et al. (the same combination applied to claim 6 but in a different order); and claim 14 has been rejected under 35 U.S.C. §103 as being unpatentable over Werling in view of Bowen et al. and Mizoguchi. These *six* grounds of rejection are respectfully traversed for the reasons of record which are hereby fully incorporated by reference and the further remarks provided below.

Initially, it is noted that the Examiner states that previous arguments in regard to claims 1 - 3, 5 - 8 and 15 were not found persuasive since they relate to subject matter which was considered to be new matter; an assertion which has been demonstrated to be incorrect, above, and the requirement for deletion shown to be

improper. However, as claim 1 has been amended to recast the term "bi-directional" in terms for which *verbatim* support is provided by the original disclosure but without alteration of the scope or substance of the claims, the Examiner's statement in response to the previously presented arguments is, in effect, an admission that the applied references do not, in fact, answer the recitations of the claims, particularly as now amended. It is also respectfully submitted that the Examiner does not make any substantive response to the remarks presented in regard to other claims but, rather, merely indicates that such remarks are non-persuasive without further comment other than a general allegation that the prior art applied is analogous to the invention and an assertion (citing *In re Obiaya*) that obviousness cannot be predicated on a difference in motivation for a modification (e.g. based on a different advantage which "naturally flows" from the combined prior art teachings), much less providing any reasoning supporting such an assertion. Further, it does not logically follow that the remarks being found non-persuasive by the Examiner (particularly when no discussion or supportive reasoning is provided) establishes the validity of prior grounds of rejection which are repeated in the present action.

Again, it is respectfully pointed out that the invention is directed to the problem that when an antenna is covered or contacted by a body part such as a hand or head of the user, the antenna function is degraded not only for reception but particularly for transmission as well and provides for sensing of covering or body contact with one of a plurality of antennas and switching, responsive to such a detection, to an antenna other than the covered or contacted antenna which is presumably not so covered or contacted because of the finite and

relatively small size of a user's hand, head or other body part relative to the portable radio terminal dimensions such that less than all antennas are likely to be similarly covered or contacted. The invention also exploits the relatively simpler process of detecting location of a body part (and inferring antenna performance degradation) rather than detecting actual antenna performance and change of electrical field strength.

Mizoguchi, as previously pointed out, does not teach or suggest transmission from one (or more) of a plurality of antennas which may be selectively switched in any of the disclosed arrangements including the prior art arrangements of Figure 1. In embodiments where two antennas are provided, the two antennas are provided for diversity reception only and then based only on the relative received signal strength or quality. While Mizoguchi teaches detection of degraded transmission performance due to antenna covering or contact by a body part through comparison of a voltage corresponding to electric field intensity, it merely provides for notification of a user to correct the same but does not provide for any switching between a plurality of antennas to avoid use of an antenna for transmission other than the antenna which is degraded. Moreover, there is not teaching or suggestion of *direct* detection of a body part covering or contacting an antenna, as claimed, but only antenna performance degradation from which such covering or contact is inferred.

It is important to note that while antenna switching for diversity *reception* is taught by Mizoguchi, *only notification* is provided when degraded antenna performance is detected for transmission and the two functions (e.g. antenna diversity switching based on

signal strength or quality and notification based on detection of degraded antenna transmission performance) are entirely separate and independent features in Mizoguchi. Therefore, Mizoguchi does not teach or suggest anything of relevance to the switching of antennas for transmission (as well as reception) based on the relatively (e.g. compared to field strength detection) much more simple direct detection of the presence of a body part in a location proximate to an antenna. There is no mention whatever of antenna switching in the passage of column 12 relied upon by the Examiner and, conversely, no detection of a body part is disclosed in Mizoguchi to control antenna switching for diversity reception but only received signal magnitude or quality. Thus Mizoguchi does not even recognize the problem addressed by the invention, much less teach or suggest even the concept of the solution provided by the invention, as claimed.

Vannatta et al. recognizes that antenna impedance will change not only due to coverage of an antenna by a body part (which is assumed - see column 3, lines 48 - 49) but also due to changes in relative positions of portions of the housing to which antennas may be attached. Therefore antennas are switched in accordance with detected relative positions of the housing portions such that an antenna is used when its impedance in relation to other circuitry and terminal structure is presumably correct (as well as, in the preferred embodiment, detection of signal strength or quality for diversity reception - see column 6, lines 9 - 18). Again, no direct *detection* of the presence or proximity of a body part or even a change in antenna impedance is taught or suggested by Vannatta et al. See column 5, lines 48 - 65, and column 6, lines 54 - 62.

Thus, while Vannatta et al. may teach the use of one of two antennas and switching between them based on relative locations of portions of a housing, it does not teach or suggest the detection of the location of a body part and switching between antennas responsive thereto or provide evidence of a level of ordinary skill in the art which would support a conclusion of obviousness of such an expedient or lead to an expectation of success in achieving provision for use of an antenna which is not deteriorated in characteristics through a much simplified detection technique. Therefore the combination of teachings of Mizoguchi and Vannatta et al. is clearly insufficient to support a *prima facie* demonstration of obviousness of any claim in the application and the ground of rejection of claims 1 - 3, 5, 7 and 8 is thus clearly in error and, upon reconsideration, should be withdrawn.

Werling et al. includes a plurality of directional antennas designed and located to provide a largely omnidirectional radiation pattern (at least in a plane - see column 3, line 45+) when all antennas are operated in parallel and disables one or more of these antennas which radiates in a direction in which the proximity of human tissue is detected, preferably by temperature and/or humidity change and within a distance of about 20 cm (see column 3, lines 1 - 27). Even in basic concept, the arrangement of Werling et al differs from that of the invention in several highly significant ways. Specifically, Werling et al. does not appear to recognize that the characteristics of an antenna can be deteriorated by partial covering of or contact with an antenna by a body part (contrary to the Examiner's explicit assertion to that effect, citing column 3, line 34 to column 4, line 24). Further, Werling et al. merely

reduces power or switches off one or more antennas which radiate in the direction of human tissue while comparing radiated power to a tolerable threshold for radiation of tissue, as noted in Figure 4 and the discussion thereof at column 4 lines 41 - 61 (thus effectively assuming that antenna characteristics are not, in fact, significantly deteriorated) rather than switching from one antenna to another. However, perhaps most importantly, Werling et al. does not teach or suggest that the antennas having different radiation directions are physically separated from one another to any significant degree, much less such that if coverage of or contact with one antenna were to be detected there would at least be a high likelihood that another antenna would not be similarly covered and its characteristics similarly deteriorated. On the contrary, the types of antennas suggested in Werling et al. at column 3, lines 45 - 56, (e.g. ceramic discs or a phased array) coupled with the indicated desirability of a substantially omnidirectional radiation pattern in the absence of detection of human tissue, as noted in the same passage of Werling et al., would tend to indicate that the antennas would or should be located in close proximity to each other. Note also the discussion at column 4, lines 4 - 10, which indicates that, in general, only lobe 27 (Figure 2) would be deactivated or reduced in power, leaving lobes 25, 26 and 28 emanating *from their respective antennas and from substantially the same location*. Thus it is clearly seen that Werling et al. does not provide and teaching or suggestion of relevance to even the concept of the present invention in providing substitution of an antenna having presumably undeteriorated characteristics for another antenna which may be presumed to have deteriorated characteristics upon detection of antenna coverage by or contact with a body

part and which can be detected much more simply and economically than detection of a deteriorated characteristic of an antenna which Werling does not recognize and may not even occur at the 20 cm detection range noted by Werling et al. while Werling is concerned only with avoiding deleterious radiation of human tissue, possibly even at the expense of compromise of reliability of communications (note column 4, lines 11 - 25) and clearly not with unconditional provision of an antenna which is highly likely to have characteristics which are not deteriorated due to coverage or body contact. It is respectfully submitted in this regard that the purposes and functions of Werling et al. and the present invention, as claimed, are so different, particularly in regard to configuration and switching of antennas that the Examiner's application of Werling et al. to the present claims (particularly in references to deterioration of antenna characteristics) even in combination with other references is highly indicative of an attempted hindsight reconstruction of the invention. Such utilization of hindsight is particularly evident in regard to claim 9 and claims 10 - 12 and 14 depending therefrom when it is considered that Werling et al. is not only silent in regard to "detecting of deterioration of an antenna characteristic" (but, rather, reduces or removes power from particular antennas in response to detection of human tissue, contrary to the subject matter claimed) and, further, does not provide an antenna structure in which the characteristics of another antenna are not likely to be similarly deteriorated because of the antennas being "separately provided" such that switching between antennas can provide the intended transmitted signal.

Finally, Bowen et al. is directed to change of

portable telephone function from a handset mode and a speakerphone mode, based on detected body proximity and is not concerned with antennas configuration or switching at all. In fact, Bowen et al. is apparently cited solely for the teaching of body proximity detection using an optical sensor in the environment of a portable telephone. Thus Bowen et al. does not mitigate any of the deficiencies of Werling et al. in regard to any of claims 9 - 12 or 14 and reconsideration and withdrawal of the rejection thereof are respectfully submitted to be in order and are respectfully requested.

Similarly, neither Werling et al. nor Bowen et al. mitigates the deficiencies of the combination of Mizoguchi et al. and Vannatta et al. as applied to claims 6, 7, 10 or 15. Likewise, Mizoguchi et al. does not mitigate the deficiencies of the combination of Werling et al. and Bowen et al. as applied to claim 14. Therefore, it is abundantly evident that the Examiner has failed to make a *prima facie* demonstration of obviousness of any claim in the application. The references relied upon by the Examiner simply do not lead to an expectation of success in achieving the meritorious functions of the invention and thus cannot provide evidence of a level of ordinary skill in the art which would support the conclusion of obviousness that the Examiner has asserted based upon asserted teachings or suggestions of the references which are not, in fact, to be found therein. Further, it is respectfully submitted that these more inclusive combinations of references are even more indication of an attempted reconstruction of the invention through impermissible hindsight and even if, *arguendo*, properly combined, do not answer the explicit recitations of the claims as pointed out above. Moreover, it is evident that the teachings or suggestions

of the references, as applied by the Examiner, are improper since the modifications implicitly proposed by the Examiner would preclude operation of the references in the intended manner. For example, spatial separation of the antennas and switching between them in response to detection of coverage or deteriorated antenna characteristics in Mizoguchi or Werling et al. would preclude the detection of body proximity or contact in Mizoguchi (which makes such detection based on reflected power or power between antenna and which, in any event, provides only a single transmission antenna which is switched, at most, between transmission and reception functions) and would preclude the desired antenna radiation pattern in Werling et al. and thus the modifications proposed by the Examiner would be improper under the precedent of *In re Gordon*, 221 USPQ 1125 (Fed. Circ., 1984) and would still fail to answer the explicit recitations of the claims.

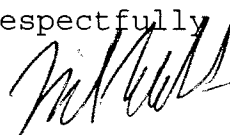
Therefore, it is respectfully submitted that all asserted grounds of rejection based on prior art are improper and in error and upon reconsideration should be withdrawn. Moreover, the maintenance of these grounds of rejection in regard to numerous claims assumes deletion of subject matter and thus are *prima facie* improper. It is also respectfully submitted to be improper to attempt to buttress an improper rejection with another improper rejection as the Examiner has sought to do here with a clearly erroneous rejection of claims under 35 U.S.C. §112, first paragraph, as discussed above. Accordingly reconsideration and withdrawal of all grounds of rejection are respectfully requested.

Since all rejections, objections and requirements contained in the outstanding official action have been fully answered and shown to be in error and/or

inapplicable to the present claims, it is respectfully submitted that reconsideration is now in order under the provisions of 37 C.F.R. §1.111(b) and such reconsideration is respectfully requested. Upon reconsideration, it is also respectfully submitted that this application is in condition for allowance and such action is therefore respectfully requested.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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